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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,713	11/26/2003	Wesley N. Ludwig	Hal-140	9789

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Houston, TX 77057

EXAMINER
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GAY, JENNIFER HAWKINS

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CA ✓ **Office Action Summary**

Application No.

10/723,713

Applicant(s)

LUDWIG, WESLEY N.

Examiner

Jennifer H Gay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 23-29 is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-15, 17-21 and 30 is/are rejected.
- 7) ☒ Claim(s) 9, 16, 22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
 Paper No(s)/Mail Date 1/26/04.
- 4) ☐ Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the relief holes having a diameter that is greater than 50% of the mounting holes as recited in claims 7, 14, and 28 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

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3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 70 and 71. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The disclosure is objected to because of the following informalities: in line 9 of page 10, it is the opinion of the examiner that "Figure 9" should be changed to Figure --13-- as only that which is known is being described and Figure 9 has not been indicated as Prior Art while Figure 13 has.

Appropriate correction is required.

5. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed without the use of the term "Improved".

### ***Claim Objections***

6. Claims 7, 14, and 28 are objected to because of the following informalities: in line 2 of each of the above claims, "greater" should be changed to --less-- as the Figures do not show that the relief holes are larger than the mounting holes; the claims are being treated as such for the purpose of examination. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 10, 17, and 30 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The above claims are considered indefinite because they recite that the relief holes intersect the mounting holes while the claims from which they depend, claim 1, 11, and 23, specifically state that the perimeters of the relief holes and the mounting holes are spaced apart from one another a given distance. It does not seem possible for the holes to be spaced apart a particular distance and intersect.

***Claim Rejections - 35 USC § 102***

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-3, 5-7, 11-14, 18, 20, and 21 are rejected under 35 U.S.C. 102(b) as being anticipated by McCullough (US 2,756,677).

*Regarding claims 1, 11, 18:* McCullough discloses a perforating gun that includes the following features:

- A plurality of charge containers **35**.
- An elongated carrier strip **20** having a centerline along its length and a transverse axis along its width. The strip defines longitudinally extending, laterally opposing edges.
- A plurality of charge container mounting holes **22** in the strip. Each of the charge containers is supported on the strip through continuous contact between the outer surface of the container and an inner surface of the mounting hole.

- A pair of webs (Figure 2, not labeled) defined between a mounting hole and the adjacent edge of the strip where each web has a width.
- A relief hole 24 positioned longitudinally adjacent each mounting hole. The longitudinal spacing between a perimeter of the relief hole and a perimeter of the mounting hole is less than the width of each web; this is not specifically taught but is shown in Figure 2. This would inherently result in the charge container having less resistance to outward yielding at a location adjacent the relief hole than at locations adjacent the webs during detonation of the charge.

*Regarding claims 2, 12:* The relief hole is longitudinally spaced from the mounting hole by what would be a deformable relief section bridging the mounting hole and the relief hole for yielding generally toward the relief hole.

*Regarding claims 3, 11, 18:* The spacing between the relief hole and the mounting hole appears to be less than 50% of the web widths.

*Regarding claims 5, 11, 20:* The gun includes another relief hole on the longitudinally opposite side of the mounting hole.

*Regarding claims 6, 13, 21:* The strip is of a uniform width along its longitudinal length.

*Regarding claims 7, 14, 18:* Each of the relief holes is generally circular and has a diameter that appears to be 50% less than the diameter of the respective mounting holes.

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 4 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough (US 2,756,677) in view of Applicant's Admitted Prior Art (AAPA).

McCullough discloses all of the limitations of the above claims except for a threaded connection between each mounting hole and respective charge container.

In Figure 13 of the instant application, applicant has admitted that threading charge containers into their respective mounting holes is well known in the art.

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the gun of McCullough such that the charge containers were threaded into their respective mounting holes as taught by AAPA in order to have provided a means for attachment that made the charge containers easy to install and easy to remove and replace.

13. Claims 8, 10, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over McCullough (US 2,756,677) Regalbuto (US 4,681,037).

*Regarding claims 8, 15:* McCullough discloses all of the limitations of the above claims except for the relief hole being an elongated slot that extends longitudinally with respect to the respective mounting hole.

Regalbuto discloses a perforating gun similar to that of McCullough. Regalbuto further teaches relief holes that are elongated slots that extend longitudinally with respect to the respective mounting holes (Figure 2).

It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the relief holes of McCullough such that they were elongated slots as taught by Regalbuto in order to have provided a relief hole that also provided room for the detonating cord (4:67-5:17).

Further, it would have been an obvious matter of design choice to have formed the relief holes as elongated slots, since applicant has not disclosed that elongated slots solves any stated problem or is for any particular purpose and it appears that the invention would equally well with the elongated slots as with circular relief holes.

*Regarding claims 10, 17:* McCullough discloses all of the limitations of the above claims except for the relief holes intersecting the mounting holes.

Regalbuto further teaches that the elongated slots intersect with their respective mounting holes.

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It would have been considered obvious to one of ordinary skill in the art, at the time the invention was made, to have modified the gun of McCullough such that the relief holes intersected the mounting holes as taught by Regalbuto in order to have provided means for attaching the detonating cord to each charge without having the thread the cord through the gun (2:37-48).

### ***Allowable Subject Matter***

14. Claims 23-29 are allowed.

15. Claims 9, 16, and 22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The remaining references made of record disclose various perforating gun carrier strips.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer H Gay whose telephone number is (703) 308-2881. The examiner can normally be reached on Monday-Thursday, 6:30-4:00 and Friday, 6:30-1:00.

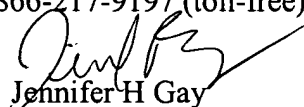
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bagnell can be reached on (703) 308-2151. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

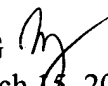
As applicant may be aware, the USPTO is in the process of moving to a new, consolidated campus. The examiner is currently still located at the old campus and can be reached at the above phone number. However, starting on 31 March 2005 all calls to the examiner should be made using a new telephone number, which is (571) 272-7029. Starting on

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that date, David Bagnell can be reached at (571) 272-6999. Please note that the official fax number will not be changing.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Jennifer H Gay  
Patent Examiner  
Art Unit 3672

JHG   
March 13, 2005